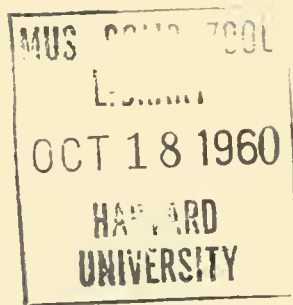


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A NEW SPECIES OF *GRAMMATOSTOMIAS*
(FAMILY MELANOSTOMIATIDAE)
FROM THE WESTERN NORTH ATLANTIC

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The genus *Grammatostomias* is most easily distinguished from other genera of the family by the presence of a streak or loop of luminous tissue on the sides of the body above the lateral row of serial photophores. Within the genus, the form of the loop or streak, and the number of rays in the pectoral fin appear to be valid characteristics upon which the several species can be distinguished.

Grammatostomias circularis, new species



Figure 1. *Grammatostomias circularis*, new species. Drawn from the type specimen, 135.6 mm from snout tip to tail base. The skin of the caudal region has been slightly restored in the illustration. Drawn by Miss Shirley Glaser.

Study Material. Type Specimen. One specimen, 135.6 mm in standard length, from the western north Atlantic, north of San Juan, Puerto Rico; Yale Peabody Museum of Natural History, Bingham Oceanographic Collection, No. 3773.

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Distinctive Characters. *G. circularis* is separated from the other two species of the genus by the presence of 9 pectoral rays and by the nearly circular form of the lateral loop of luminous tissue.

Description. Proportional measurements of the type specimen are expressed as percentages of the standard length unless otherwise indicated.

Body: depth 10.5.

Head: 15.6

Eye: 2.6; 16.5% of head.

Snout: 3.4; 21.7% of head.

Interorbital: 4.1; 26.0% of head; ca. 150% of eye diameter.

Distance from snout: to origin of dorsal fin 78.3; to origin of anal fin 78.3; to origin of ventral fins 45.8.

Dorsal fin: rays 21; length of base 14.6.

Anal fin: rays 23; length of base 17.0.

Pectoral fin: rays 9.

Ventral fin: rays 8.

Branchiostegal rays: 10.

Serial photophores: Ventral row: I-P 7, P-V 18, V-A 21 (the last two above anal base), A-C 13. Lateral row: O-V 18, V-A 19, 20.

Body slender, compressed, depth about $1/10$ of standard length. Caudal peduncle about 5% of standard length, strongly compressed. Barbel pigmented basally, broken off, the part remaining not quite as long as head.

Head about $1/6$ of standard length, its dorsal profile gently rounded, premaxilla projecting into dorsal line. Snout longer than eye. Interorbital width greater than snout, about $1\ 1/2$ times eye, slightly convex, with a low, inconspicuous ridge above each eye. Eye round, about $1/6$ of head. A small light organ

present on ventral edge of fleshy orbit below center of eye. Postocular organ elongate, its length about 5 times its width; length less than 1/2 eye, long axis parallel to upper jaw. A small, vertically elongate luminous spot present before postocular organ, and three small spots on upper jaw, one just before postocular organ, a second elongate spot behind postocular, and a third round one behind. Branchiostegals 10, a photophore on membrane near base of each ray.

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Mouth extending nearly full length of head, gape straight. Premaxilla with a large fixed tooth anteriorly, followed by a larger depressible one which is largest tooth in upper jaw. These followed by two rigid, outer teeth, a depressible inner tooth, a rigid outer, a depressible inner, and five rigid teeth to posterior end of premaxilla. Maxillary with about 28 small oblique denticles on posterior part of its ventral margin. Mandible with a large, rigid fang anteriorly, followed by a minute rigid tooth, a depressible tooth and a rigid outer tooth. Behind these, three inner depressible teeth and three rigid outer teeth, approximately in pairs, inner teeth longer than outer ones. Behind these, 11 small rigid teeth in single row, irregular in size, 1st and 4th longest. Vomer without teeth. Palatines with 3 or 4 teeth in single row on each side, 2nd and 4th teeth minute. Two pairs of backwardly-directed teeth on tongue. Twelve small single teeth on first gill arch.

Pectoral fins close to mid-ventral line, their origins just below posterior edge of gill openings, fins of 9 long, slender, dark-colored rays, several with slim luminous bodies, one with a large thick mass of luminous tissue basally. Pectoral rays about as long as a head. Ventral fins of 8 rays, well developed, originating before middle of standard length. Dorsal and anal origins on same vertical, anal base longer than that of dorsal, both fins with thick sheaths of body skin extending well up on the rays. Caudal forked.

Sides of body with a nearly circular line of luminous tissue, its antero-posterior diameter slightly greater than length of post-ocular part of head, extending backwards from gill openings (see fig. 1). Vertical extent from near dorsum almost to

lateral row of serial photophores. Luminous line quite even, smooth, without zigzags or noticeable thickenings.

Skin smooth, scaleless, marked with vertical rows of tiny photophores, and with numerous small organs scattered over head and body.

Color. The alcoholic specimen is dark brownish black. Serial photophores bluish, luminous loop pale violet.

Type Locality. North of San Juan, Puerto Rico, $18^{\circ} 55' N$, $66^{\circ} 10' W$ to $19^{\circ} 05' N$, $65^{\circ} 59' W$; 0 to 225 fathoms.

Name. The species is named *circularis*, with reference to the nearly circular shape of the lateral loop of luminous tissue.

Comparison With Other Species. The present species is most easily compared with others in the genus by means of the following key.

Key to Species of *Grammatostomias*

- 1a. Sides with a long luminous line from just behind gill cover to behind ventral bases, hooked sharply downward at its anterior end. Pectoral with 5 rays.....*dentatus* Goode and Bean, 1895*
- 1b. Sides with a closed loop of luminous tissue. Pectoral rays 9 to 11.
- 2a. Luminous loop elongate, extending posteriorly about to ventral bases, its anterior ventral portion thickened and zigzag.....*flagellibarba* Holt and Byrne, 1910.**
- 2b. Luminous loop nearly circular, without thickenings or zigzags.....*circularis* new species.

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**Lamproteus angulifer* Beebe 1932 is a synonym.

***Lamproteus paucifilis* Regan and Trewavas 1930 and *Lamproteus phanobrochus* Regan and Trewavas 1930 are synonyms.